**CAR-Tnm cell therapy for melanoma targeting TYRP-1**

## Grant Award Details

CAR-Tnm cell therapy for melanoma targeting TYRP-1

**Grant Type:** Therapeutic Translational Research Projects

**Grant Number:** TRAN1-12258

**Investigator:**

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| **Name:** | Cristina Puig Saus |
| **Institution:** | University of California, Los Angeles |
| **Type:** | PI |

**Disease Focus:** Cancer, Melanoma, Solid Tumors

**Human Stem Cell Use:** Adult Stem Cell

**Award Value:** $5,904,462

**Status:** Pre-Active

## Grant Application Details

**Application Title:** CAR-Tnm cell therapy for melanoma targeting TYRP-1

**Public Abstract:**

**Translational Candidate**

Autologous naive/memory progenitor T cells genetically modified to express a chimeric antigen receptor targeting the Tyrosinase-related protein 1

**Area of Impact**

Patient with melanoma, without response or with relapse after immune checkpoint blockade therapy and patients with rare melanoma subtypes.

**Mechanism of Action**

T cells genetically modified to express the 20D7SL CAR detect and kill melanoma cells with high expression of TYRP-1 (representing ~30% of all melanoma lesions). Our Therapeutic Candidate uses a subset of naïve/memory progenitor T cells (Tnm) with improved ability to engraft and reconstitute a functional memory response compared to fully differentiated T cells. We anticipate that using Tnm cells will lead to a potent and persistent antitumor response.

**Unmet Medical Need**

Immune Checkpoint Blockade (ICB)-resistant melanoma is an unmet medical need. Despite the success of ICB therapy, 40% of patients with melanoma do not respond, and some responders develop acquired resistance. ICB-resistant melanoma frequency is higher in patients with rare subtypes of melanoma.

**Project Objective**

Pre-IND meeting

**Major Proposed Activities**

- Optimize, implement, and validate the Therapeutic Candidate large-scale, GMP-compliant manufacturing and lot release criteria protocols
- Assess safety (selectivity, reactivity in normal tissues, toxicology) and antitumor efficacy (cytotoxicity, cytokine release, tumor growth control).
- Assess feasibility of enrolling patients with rare subtypes of melanoma in the clinical trial, draft clinical protocol and complete pre-IND meeting

**Statement of Benefit to California:**

In 2021, 11,450 Californians will be diagnosed with melanoma. Around 30% of all cases (3435) will present high levels of TYRP-1 and could potentially benefit from our Therapeutic Candidate. Acral and mucosal melanoma are subtypes of melanoma with higher expression of TYRP-1 and a much lower survival rate than cutaneous melanoma. Their incidence is higher in the Hispanic, Black, and Asian/Pacific Islander populations. This is especially relevant in California, given the diversity of our patients.

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